USB DVI KVMP™ Switch

CS1762A / CS1764A

User Manual

FCC Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna;
- Increase the separation between the equipment and receiver;
- Connect the equipment into an outlet on a circuit different from that which the receiver is connected;
- Consult the dealer/an experienced radio/television technician for help.

RoHS

This product is RoHS compliant.

SJ/T 11364-2006

The following contains information that relates to China.

部件名称	有毒有害物质或元素					
	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
电器部件	●	○	○	○	○	○
机构部件	○	○	○	○	○	○

○: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006规定的限量要求之下。

●: 表示符合欧盟的豁免条款，但该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006的限量要求。

×: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006的限量要求。

User Information

Online Registration

Be sure to register your product at our online support center:

International	http://support.aten.com
North America	http://www.aten-usa.com/product_registration

Telephone Support

For telephone support, call this number:

International	886-2-8692-6959
China	86-10-5255-0110
Japan	81-3-5615-5811
Korea	82-2-467-6789
North America	1-888-999-ATEN ext 4988
United Kingdom	44-8-4481-58923

User Notice

All information, documentation, and specifications contained in this manual are subject to change without prior notification by the manufacturer. The manufacturer makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranties as to merchantability or fitness for any particular purpose. Any of the manufacturer's software described in this manual is sold or licensed *as is*. Should the programs prove defective following their purchase, the buyer (and not the manufacturer, its distributor, or its dealer), assumes the entire cost of all necessary servicing, repair and any incidental or consequential damages resulting from any defect in the software.

The manufacturer of this system is not responsible for any radio and/or TV interference caused by unauthorized modifications to this device. It is the responsibility of the user to correct such interference.

The manufacturer is not responsible for any damage incurred in the operation of this system if the correct operational voltage setting was not selected prior to operation. PLEASE VERIFY THAT THE VOLTAGE SETTING IS CORRECT BEFORE USE.

Package Contents

The CS1762A / CS1764A package consists of:

- 1 CS1762A / CS1764A USB DVI KVMP™ Switch
- 2 Custom KVM Cables sets (DVI-D) (CS1762A)
- 4 Custom KVM Cable Sets (DVI-D) (CS1764A)
- 1 Power Adapter
- 1 User Instructions*

Check to make sure that all the components are present and that nothing got damaged in shipping. If you encounter a problem, contact your dealer.

Read this manual thoroughly and follow the installation and operation procedures carefully to prevent any damage to the unit, and/or any of the devices connected to it.

***** Features may have been added to the CS1762A / CS1764A since this manual was printed. Please visit our website to download the most up-to-date version of the manual.

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About this Manual

This User Manual is provided to help you get the most from your CS1762A / CS1764A. It covers all aspects of installation, configuration and operation. An overview of the information found in the manual is provided below.

Chapter 1, Introduction, introduces you to the CS1762A / CS1764A system. Its purpose, features and benefits are presented, and its front and back panel components are described.

Chapter 2, Hardware Setup, describes how to set up your installation. The necessary steps are provided.

Chapter 3, Basic Operation, explains the fundamental concepts involved in operating the CS1762A / CS1764A.

Chapter 4, Hotkey Operation, details all of the concepts and procedures involved in the Hotkey operation of your CS1762A / CS1764A installation.

Chapter 5, Keyboard Emulation, provides tables that list the PC to Mac and PC to Sun keyboard emulation mappings.

Chapter 6, The Firmware Upgrade Utility, explains how to upgrade the CS1762A / CS1764A's firmware with the latest available versions.

An Appendix, provides specifications and other technical information regarding the CS1762A / CS1764A.

Conventions

This manual uses the following conventions:

Monospaced	Indicates text that you should key in.
[ ]	Indicates keys you should press. For example, [Enter] means to press the **Enter** key. If keys need to be chorded, they appear together in the same bracket with a plus sign between them: [Ctrl+Alt].
1.	Numbered lists represent procedures with sequential steps.
♦	Bullet lists provide information, but do not involve sequential steps.
→	Indicates selecting the option (on a menu or dialog box, for example), that comes next. For example, Start → Run means to open the *Start* menu, and then select *Run*.
	Indicates critical information.

Product Information

For information about all ATEN products and how they can help you connect without limits, visit ATEN on the Web or contact an ATEN Authorized Reseller. Visit ATEN on the Web for a list of locations and telephone numbers:

International	http://www.aten.com
North America	http://www.aten-usa.com

Chapter 1
Introduction

Overview

The CS1762A / CS1764A USB KVMP™ Switch charts a revolutionary new direction in KVM (Keyboard, Video, Mouse) switch functionality by combining a 2/4 port KVM switch with a 2 port USB hub at the same time as providing an interface for a Digital Visual Interface (DVI) monitor. In addition, CS1762A / CS1764A comes with ATEN's new Video DynaSync™ technology, which eliminates boot-up display problems and optimizes resolution, and power on detection, which means if one computer is powered off, the CS1762A / CS1764A will automatically switch to the next powered-on computer.

As a KVM switch, the CS1762A / CS1764A allows users to access two or four computers from a single USB keyboard, USB mouse, and monitor console. As a USB 2.0 hub, it permits each computer to access any peripherals connected to the hub on a one-computer-at-a-time basis.

The unit's independent switching feature, allows the KVM focus to be on one computer while the USB peripheral focus is on another. This eliminate the need to purchase a separate USB hub as well as the need to purchase separate stand-alone peripheral sharers.

The CS1762A / CS1764A further improves on previous designs with DVI connectors, and the transfer of keyboard and mouse data to the computers via a fast, reliable USB connection. DVI supports both digital video input (flat panel displays, data projectors, plasma displays, digital TVs and set-top boxes) and analog video input (traditional monitors and TVs).

The CS1762A / CS1764A is audio enabled. A single microphone (CS1762A) / Two microphones (CS1764A) can provide audio input to each of the computers, and you can listen to the audio output of each computer on a single set of speakers (CS1762A) / two sets of speakers (CS1764A), on a one-computer-at-a-time basis. As with the USB peripherals, the audio focus can be independent of the KVM focus.

Setup is fast and easy; simply plug cables into their appropriate ports. There is no software to configure, no installation routines, and no incompatibility problems. Since the CS1762A / CS1764A intercepts keyboard input directly, it will work on multiple computing platforms (PC (x86/x64), Macintosh PowerPC, and Sun Microsystems Sparc).

There are three convenient methods to access the computers: port selection pushbuttons located on the unit's front panel; hotkey combinations entered from the keyboard; and the very latest in mouse port-switching – simply double-click on the scroll wheel of a USB mouse to change ports.

There is no better way to save time and money than with a CS1762A / CS1764A installation. Since a single console manages all of the computers, the CS1762A / CS1764A setup: eliminates the expense of having to purchase separate console components for each computer; saves all the space those extra components would take up; saves on energy costs; and eliminates the inconvenience and wasted effort involved in constantly moving from one computer to another.

Features

- One USB console controls two (CS1762A) or four (CS1764A) DVI computers and two additional USB 2.0 devices
- 2-port USB 2.0 hub built in
- Fully compliant with the USB 2.0 specification
- Computer selection via front panel pushbuttons, hotkeys, and mouse
- Audio enabled – full bass response provides a rich experience for 2.1 channel surround sound systems
- Multiplatform support – Windows 2000/XP/Vista/7, Linux, Mac, and Sun*
- Supports widescreen resolutions
- Superior video quality – 1920 x 1200
- Independent switching of KVM, USB, and Audio focus
- DVI digital and analog monitor support – fully compliant with the DVI specifications
- HDCP compliant
- Video DynaSync™ – exclusive ATEN technology optimizes display resolution and eliminates boot-up display problems
- Power on detection – if one computer is powered off, the switch will automatically switch to the next powered-on computer
- Console mouse port emulation/bypass feature supports most mouse drivers and multifunction mice
- Complete keyboard emulation for error-free booting
- Mac/Sun keyboard support and emulation*
- Multilingual keyboard mapping – supports English, Japanese, and French keyboards
- Auto Scan Mode for monitoring all computers
- Firmware upgradable

Note: 1. See *Hotkey Default Settings*, page 44, for full details.

2. PC keyboard combinations emulate Mac/Sun keyboards; Mac/Sun keyboard work only with their own computers

Hardware Requirements

Console

- A DVI compatible monitor capable of the highest possible resolution
- A USB mouse
- A USB keyboard
- Microphone and speakers (optional)

Computers

The following equipment must be available on each computer:

- A DVI port

Note: The quality of the display is affected by the quality of the DVI display card. For best results, we recommend you purchase a high quality product.

- Type A USB port
- Audio ports (optional)

Cables

Only 1.8m DVI-D KVM cable sets, which are specifically designed to work with this switch, may be used to link to the computers. Two (CS1762A) or four (CS1764A) cable sets are provided with this package.

Note: The quality of the display is affected by the quality and length of the cables. If you need additional cable sets, please contact your dealer to purchase the appropriate ones for your switch.

Operating Systems

Supported operating systems are shown in the table, below:

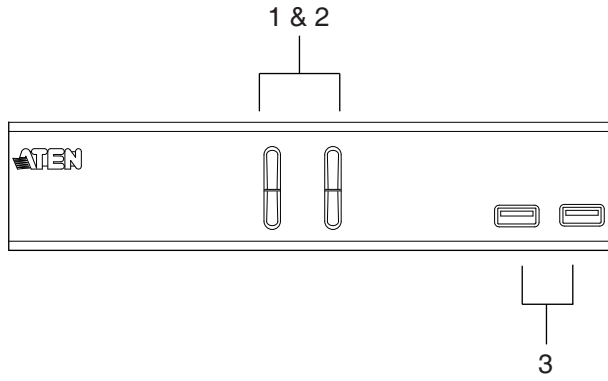
OS		Version
Windows		2000 / XP / 2003 / 2008 / Vista / 7
Linux	RedHat	9.0 and higher
	SuSE	10 / 11.1 and higher
	Debian	3.1 / 4.0
	Ubuntu	7.04 / 7.10
UNIX	AIX	4.3 and higher
	FreeBSD	5.5 and higher
	Sun	Solaris 8 and higher
Novell	Netware	6.0 and higher
Mac		OS 9 to 10.6 (Snow Leopard)

Note: 1. Supports Linux Kernel 2.6 and higher.

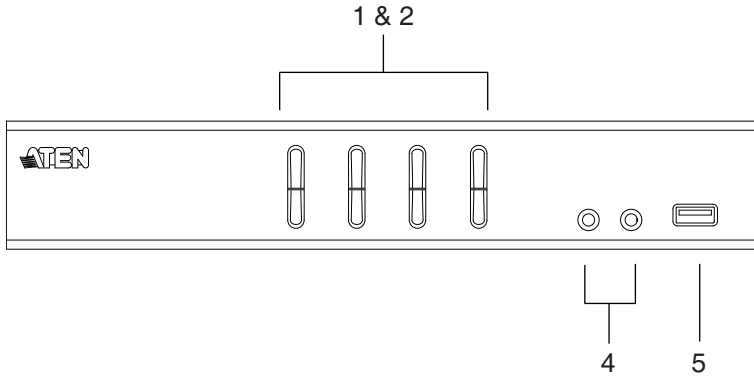
2. The CS1762A / CS1764A has a built-in USB 2.0 hub, so does not support PCs or OS that do not support USB 2.0.

Components

CS1762A Front View

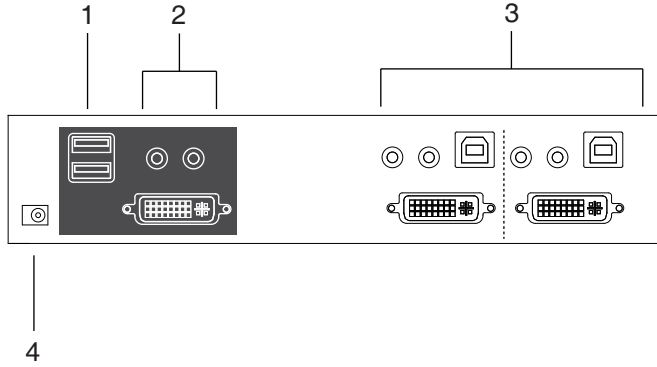


CS1764A Front View

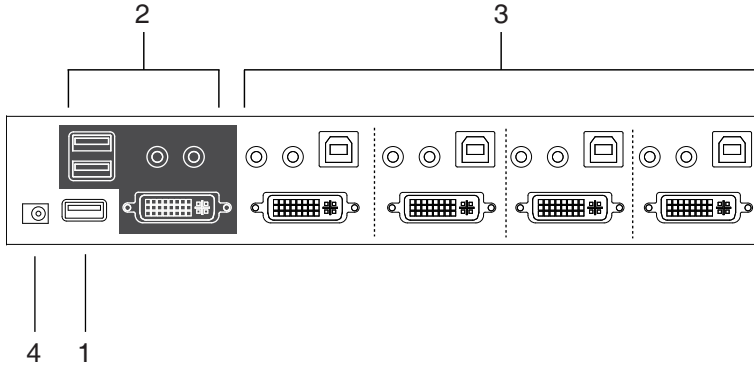


No.	Component	Description
1	Port Selection Pushbuttons	For manual port selection (see see *Manual Switching*, page 15, also): ◆ Press a port selection pushbutton for longer than two seconds to bring the KVM, USB hub, and audio focus to the computer attached to its corresponding port. ◆ Press a port selection pushbutton twice to bring the audio focus to the computer attached to its corresponding port. ◆ Press a switch for less than two seconds to bring only the KVM focus to the computer attached to its corresponding port. ◆ Press switches 1 and 2 simultaneously for 2 seconds to start Auto Scan Mode, see *Auto Scanning*, page 21 for details.
2	Port LEDs	The Port LEDs are built into the Port Selection Switches. The upper ones are the KVM Port LEDs; the lower ones are the USB LEDs: **KVM** ◆ Lights DIM ORANGE to indicate that the computer attached to the corresponding port is up and running (On Line). ◆ Flashes to indicate that Firmware Upgrade mode is in effect. ◆ Changes to BRIGHT ORANGE to indicate that the computer attached to its corresponding port is the one that has the KVM focus (Selected). ◆ Flashes to indicate that the computer attached to its corresponding port is being accessed under Auto Scan mode. **USB** ◆ Lights GREEN to indicate that the computer attached to its corresponding port is the one that has access to the USB peripherals.
3	USB Console Ports	(CS1762A only) Your USB keyboard and USB mouse plug in here. **Note:** The CS1764A's USB console ports are located on the unit's rear panel.
4	Audio Ports	(CS1764A only) The cables from your main speakers and main microphone plug in here. The speakers and microphone plugged in here have priority over those in the rear panel. **Note:** The CS1762A's audio ports are located on the unit's rear panel.
5	USB 2.0 Hub	(CS1764A only) USB 2.0 peripherals (printers, scanners, etc.) can plug into this port (this may require an extra power adapter). **Note:** The CS1762A's USB 2.0 hub port is located on the unit's rear panel.

CS1762A Rear View



CS1764A Rear View



No.	Component	Description
1	USB 2.0 Hub	USB peripherals (printers, scanners, etc.) can plug into this/ these port(s) (this may require an extra power adapter).
2	Console Port Section	CS1762A – The cables from your DVI monitor, speakers, and microphone plug in here. Each connector is marked with an appropriate icon to indicate itself. **Note:** The CS1762A's console USB keyboard and USB mouse ports are located on the unit's front panel. CS1764A – The cables from your DVI monitor, USB keyboard, USB mouse, speakers, and microphone plug in here. Each connector is marked with an appropriate icon to indicate itself.
3	KVM Port Section	The cables that link the switch to your computers plug in here. Each KVM port section is comprised of a microphone jack, speaker jack, USB type B socket and a DVI connector.
4	Power Jack	The power adapter cable plugs into this jack.

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Chapter 2
Hardware Setup

1. Important safety information regarding the placement of this device is provided on page 37. Please review it before proceeding.
2. Make sure that power to all the devices you will be installing has been turned off. You must unplug the power cords of any computers that have the Keyboard Power On function.

Cable Connections

To set up your CS1762A / CS1764A installation, refer to the installation diagram on the following page (the numbers in the diagrams correspond to the steps, below), and do the following:

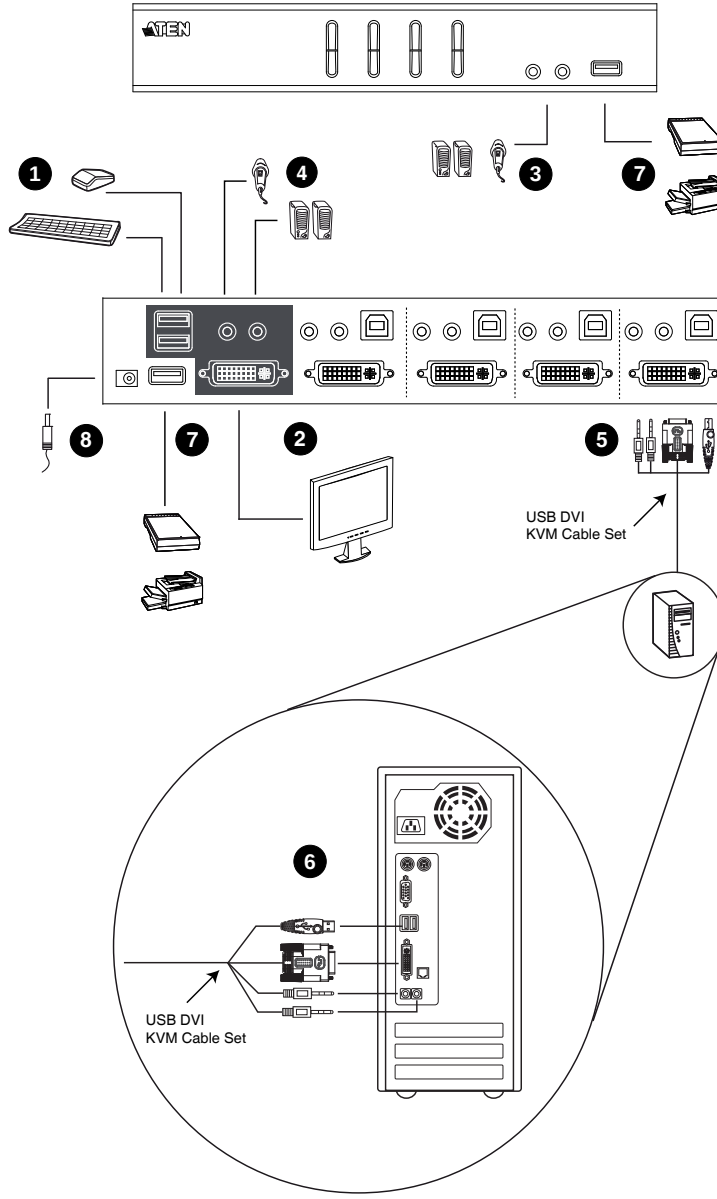
1. Plug your USB keyboard and USB mouse into the USB console ports located on the unit's rear panel.
2. Plug your console monitor into the DVI console port located in the unit's rear panel and power on the monitor.
3. Plug your main microphone and speakers into the console microphone and speaker jacks located on the unit's front panel. The microphone and speakers plugged into this panel have priority over those in the rear panel.
4. Plug your secondary microphone and speakers into the console audio ports located on the unit's rear panel.
5. Using a KVM cable set (provided with this package), plug the DVI connector into any available DVI socket in the KVM port section of the switch, then plug the accompanying USB, microphone and speaker connectors into their corresponding USB, microphone, and speaker sockets.

   Note: Verify that all the plugs are in the same KVM Port sockets (all in Port 1, all in Port 2, etc.). Each socket is marked with an appropriate icon.

6. At the other end of the cable, plug the USB, video, microphone, and speaker cables into their respective ports on the computer.

7. Plug your USB peripherals into the type A sockets in the USB hub section.
8. Plug the power adapter that came with your switch into an AC power source, then plug power adapter cable into the switch's Power Jack.
9. Turn on the power to the computers.

Installation Diagram



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Chapter 3
Basic Operation

Manual Switching

There are three convenient methods to access the computers: Manual – which involves pressing the port selection pushbuttons located on the unit's front panel; Mouse – which involves clicking the scroll wheel of the mouse; and Hotkey – which involves entering combinations from the keyboard. Hotkey port selection is discussed in the next chapter.

For manual port selection:

- Press and release a port selection pushbutton to bring the KVM focus to the computer attached to its corresponding port. The USB and Audio focus does not change – they stay with the port that they are already on.
- Press a port selection pushbutton twice to bring the audio focus to the computer attached to its corresponding port.
- Press and hold a port selection pushbutton for more than 2 seconds to bring the KVM focus, plus the USB and Audio focus to the computer attached to its corresponding port.
- Press and hold port selection pushbutton 1 and 2 for more than 2 seconds to start Auto Scan Mode, see page 21 for details.
- Press and release either port selection pushbutton to stop Auto Scan Mode. The KVM focus goes to the computer attached to the corresponding port of the switch you pressed.

Mouse Port-switching

The CS1762A / CS1764A supports the very latest in mouse port-switching – simply double-click the scroll wheel of your USB mouse to cycle through the ports.

Note: 1. This featured is only supported by USB 3-key scroll wheel mice.

2. The default setting is off.

3. This feature is only supported when Mouse Emulation is enabled. See *Mouse Emulation Control*, page 27, for details.

Hot Plugging

The CS1762A / CS1764A supports USB hot plugging – components can be removed and added back into the installation by unplugging their cables from the USB hub ports without the need to shut the unit down.

Powering Off and Restarting

If it becomes necessary to Power Off the CS1762A / CS1764A unit, before starting it back up you must do the following:

1. Shut down all the computers that are attached to the switch.
2. Unplug the switch's power adapter cable.
3. Wait 10 seconds, then plug the switch's power adapter cable back in.
4. After the switch is up, Power On the computers.

Port ID Numbering

Each KVM port section on the CS1762A / CS1764A switch is assigned a port number. (1 or 2 for the CS1762A; 1 to 4 for the CS1764A). The port numbers are marked on the rear panel of the switch (see page 8).

The Port ID of a computer is derived from the KVM port number it is connected to. For example, a computer connected to KVM port 2 has a Port ID of 2.

The Port ID is used to specify which computer gets the KVM, USB peripheral, and audio focus with the Hotkey port selection method (see page 20 for details).

Alternate Manual Port Selection Settings

When Hotkey Setting Mode has been activated, pressing [S] will invoke the alternative front panel pushbutton manual port selection functions as follows (see page 26, also):

- Press a port selection pushbutton once to bring the KVM, audio and USB focus to the computer attached to its corresponding port.
- Press a port selection pushbutton twice to bring the audio focus to the computer attached to its corresponding port.
- Press and hold a port selection pushbutton for more than 2 seconds to bring only the KVM focus to the computer attached to its corresponding port.
- Press and hold port selection pushbuttons 1 and 2 for more than 2 seconds to start Auto Scan Mode, see page 21 for details.

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Chapter 4
Hotkey Operation

The CS1762A / CS1764A provides an extensive, easy-to-use, hotkey function that makes it convenient to control and configure your KVM installation from the keyboard. Hotkeys provide independent switching of the KVM, USB hub, and audio focus. Therefore, you can give one computer the KVM focus, another the USB hub focus, while a third has the audio focus.

Port Switching

All port switches begin with tapping the **Scroll Lock** key twice. The tables below describe the actions that each combination performs.

Note: If using the Scroll Lock key conflicts with other programs running on the computer, the **Ctrl** key can be used, instead. See *Alternate Port Switching Keys*, page 23 for details.

Cycling Through the Ports

Hotkey	Action
[Scroll Lock] [Scroll Lock] [Enter]	Brings the **KVM**, **USB hub**, and **audio** focus from the port that currently has the KVM focus to the next port on the installation (1 to 2; 2 to 1 for the CS1762A; 1 to 2; 2 to 3; 3 to 4; 4 to 1 for the CS1764A). **Note:** The KVM, USB hub, and audio focus all go to this port even if they were on different ports to begin with.
[Scroll Lock] [Scroll Lock] [K] [Enter]	Brings only the **KVM** focus from the port that currently has it to the next port on the installation. The USB and audio focus remain where they are.
[Scroll Lock] [Scroll Lock] [U] [Enter]	Brings only the **USB hub** focus from the port that currently has it to the next port on the installation. The KVM and audio focus remain where they are.
[Scroll Lock] [Scroll Lock] [S] [Enter]	Brings only the **audio** focus from the port that currently has it to the next port on the installation. The KVM and USB hub focus remain where they are.

Going Directly to a Port

Hotkey	Action
[Scroll Lock] [Scroll Lock] [n] [Enter]	Brings the **KVM**, **USB hub**, and **audio** focus to the computer attached to the port corresponding to the specified Port ID. **Note:** The KVM, USB hub, and audio focus all go to this port even if they were on different ports to begin with.
[Scroll Lock] [Scroll Lock] [n] [K] [Enter]	Brings only the **KVM** focus to the computer attached to the specified port. The USB hub and audio focus remain where they are.
[Scroll Lock] [Scroll Lock] [n] [U] [Enter]	Brings only the **USB hub** focus to the computer attached to the specified port. The KVM and audio focus remain where they are.
[Scroll Lock] [Scroll Lock] [n] [S] [Enter]	Brings only the **audio** focus to the computer attached to the specified port. The KVM and USB hub focus remain where they are.
[Scroll Lock] [Scroll Lock] [n] [K] [U] [Enter]	Brings the **KVM** and **USB hub** focus to the computer attached to the specified port. The audio focus remains where it is.
[Scroll Lock] [Scroll Lock] [n] [K] [S] [Enter]	Brings the **KVM** and **audio** focus to the computer attached to the specified port. The USB hub focus remains where it is.
[Scroll Lock] [Scroll Lock] [n] [U] [S] [Enter]	Brings the **USB hub** and **audio** focus to the computer attached to the specified port. The KVM focus remains where it is.

Note: The **n** stands for the computer's Port ID number (1, 2, 3, or 4). See "Port ID Numbering" on page 17. Replace the **n** with the appropriate Port ID when entering hotkey combinations.

Auto Scanning

The CS1762A / CS1764A's Auto Scan feature automatically cycles the KVM focus through the computer ports at regular intervals. This allows you to monitor the computer activity without having to take the trouble of switching from port to port manually. Although the video focus switches from port to port, the keyboard, mouse, and USB focus doesn't switch. They stay at the port they were on when Auto Scanning started. See the table below for details. .

Hotkey	Action
[Scroll Lock] [Scroll Lock] [A] [Enter]	Invokes Auto Scan. The KVM focus cycles from port to port at **5 second intervals**. Five second intervals is the Default setting.
[Scroll Lock] [Scroll Lock] [A] [n] [Enter]	The KVM focus cycles from port to port at n second intervals. **Note:** The n stands for the number of seconds that the CS1762A / CS1764A should dwell on a port before moving on to the next. Replace the n with a number between 1 and 99 when entering this hotkey combination

When you use the port switching hotkey or HSM, the mouse cursor must be in the current computer display.

While Auto Scan Mode is in effect, ordinary keyboard and mouse functions are suspended – only Auto Scan Mode compliant keystrokes and mouse clicks can be input. You must exit Auto Scan Mode (press the **Esc** key or the **Spacebar**) in order to regain normal control of the console.

Hotkey Setting Mode

Hotkey Setting Mode is used to set up your CS1762A / CS1764A switch configuration. All operations begin with invoking Hotkey Setting Mode (HSM).

Invoking HSM

To invoke HSM do the following:

1. Press and hold down **[Num Lock]**.
2. Press and release **[-]**.
3. Release **[Num Lock]**.

Note: 1. There is an alternate key combination to invoke HSM. See page 23 for details.

2. The minus key must be released within one half second, otherwise Hotkey invocation is canceled.

When HSM is active, the Caps Lock, and Scroll Lock LEDs flash in succession to indicate that HSM is in effect. They stop flashing and revert to normal status when you exit HSM.

Ordinary keyboard and mouse functions are suspended – only Hotkey compliant keystrokes and mouse clicks (described in the sections that follow), can be input.

At the conclusion of some hotkey operations, you automatically exit hotkey mode. With some operations, you must exit manually. To exit HSM manually, press the **Esc** key, or the **Spacebar**.

Alternate HSM Invocation Keys

An alternate set of HSM invocation keys is provided in case the default set conflicts with programs running on the computers.

To switch to the alternate HSM invocation set, do the following:

1. Invoke HSM (see page 22)
2. Press and release **[H]**.

   The HSM invocation keys become the Ctrl key (instead of Num Lock) and the F12 key (instead of minus).

Note: This procedure is a toggle between the two methods. To revert back to the original HSM invocation keys, invoke HSM, then press and release the **H** key again.

Alternate Port Switching Keys

The port switching activation keys can be changed from tapping the Scroll Lock key twice ([Scroll Lock] [Scroll Lock]) to tapping the Ctrl key twice ([Ctrl] [Ctrl]). To change the port switching activation keys, do the following:

1. Invoke HSM (see page 22)
2. Press and release **[T]** .

Note: This procedure is a toggle between the two methods. To revert back to the original [Scroll Lock] [Scroll Lock] method, invoke HSM, then press and release the **T** key again.

Keyboard Operating Platform

The CS1762A / CS1764A's default port configuration is for a PC compatible keyboard operating platform. If your console uses a PC compatible keyboard and you have a Mac attached to a port, for example, you can change the port's keyboard operating platform configuration so that the PC compatible keyboard emulates the Mac keyboard. The procedure is as follows:

1. Bring the KVM focus to the port you want to set.
2. Invoke HSM (see page 22)
3. Press and release the appropriate Function key (see table below). After completing this procedure, you automatically exit HSM.

Function Key	Operation
[F2]	Enables Mac keyboard emulation, see *Mac Keyboard*, page 29 for details.
[F3]	Enables Sun keyboard emulation, see *Sun Keyboard*, page 30 details.
[F10]	Automatically detects and sets the keyboard operating platform.

Note: To set the keyboard language, see *Video DynaSync*, page 26.

List Switch Settings

To see a listing of the current switch settings, do the following:

1. Open a text editor or word processor and place the cursor in the page window.
2. Invoke HSM (see page 22).
3. Press and release **[F4]** to display the settings.

USB Reset

If the USB loses focus and needs to be reset, do the following:

1. Invoke HSM (see page 22).
2. Press and release **[F5]**.

Keyboard Language

To change the keyboard language, do the following:

1. Invoke HSM (see page 22).
2. Press **[F6] [*nn*] [Enter]**.

Note: *nn* is a two-digit number that represents the keyboard language code (US English: 33; French: 08; Japanese: 15).

Hotkey Buzzer Control

The Buzzer can be enabled or disabled. The default setting is enabled. To disable the Buzzer, do the following:

1. Invoke HSM (see page 22).
2. Press and release **[B]**.

This procedure is a toggle. Repeat to enable.

Port Switching Keys

The Port Switching Keys ([Scroll Lock] [Scroll Lock] / [Ctrl] [Ctrl]) can be enabled or disabled. The default setting is enabled. To disable, do the following:

1. Invoke HSM (see page 22).
2. Press **[X] [Enter]**.

This procedure is a toggle. Repeat to enable.

Firmware Upgrade Mode

To set the CS1762A / CS1764A to Firmware Upgrade Mode, do the following:

1. Invoke HSM (see page 22).
2. Key in: `upgrade`
3. Press **[Enter]**. The orange front panel LEDs flash to indicate Firmware Upgrade Mode is in effect.

Note: To exit Firmware Upgrade Mode, you must power off the switch. See *The Firmware Upgrade Utility*, page 31, for details.

Restore Default Settings

To reset the CS1762A / CS1764A to its default hotkey settings, do the following:

1. Invoke HSM (see page 22).
2. Press **[R] [Enter]**.

See *Hotkey Default Settings*, page 44

Video DynaSync

Video DynaSync is ATEN's exclusive technology that eliminates boot-up display problems and optimizes resolution when switching between ports. To invoke Video DynaSync, do the following:

1. Invoke HSM (see page 22)
2. Press **[D]**.

Note: If the monitor is disconnected and reconnected, the CS1762A / CS1764A re-executes Video DynaSync.

Alternate Manual Port Selection Settings

To toggle between the default and the alternative front panel pushbutton manual port selection settings, do the following:

1. Invoke HSM (see page 22)
2. Press **[S]**.

See *Alternate Manual Port Selection Settings*, page 17, for full details.

Mouse Emulation Control

The default setting is enabled. To disable, do the following:

1. Invoke HSM (see page 22).
2. Press **[M]**.

This procedure is a toggle. Repeat to enable.

Mouse Port-switching

The Mouse Port-switching function can be enabled or disabled. The default setting is disabled. To enable, do the following:

1. Invoke HSM (see page 22).
2. Press **[W] [Enter]**.

This procedure is a toggle. Repeat to disable.

Note: The feature is only supported when mouse emulation is enabled. See *Mouse Emulation Control*, above.

SPC Mode

To set the keyboard/mouse to use SPC mode so that it can work under special operating systems as a standard (104 key) keyboard/mouse, do the following:

1. Invoke HSM (see page 22).
2. Press **[F1]**.

HSM Summary Table

After invoking HSM (see page 22), key in one of the following keys to perform the corresponding function:

Key	Function
[H]	Toggles between the default ([Num Lock] [-]) and alternate ([Ctrl] [F12]) HSM invocation keys.
[T]	Toggles between the default ([Scroll Lock] [Scroll Lock]) and alternate ([Ctrl] [Ctrl]) Port Switching keys.
[F2]	Enables Mac keyboard emulation.
[F3]	Enables Sun keyboard emulation
[F10]	Automatically detects and sets the keyboard operating platform.
[F4]	Lists the current switch settings via the paste function of a text editor.
[F5]	Performs a reset on all USB devices.
[F6] [*nn*] [Enter]	Sets the keyboard language. **Note:** *nn* is a two-digit number that represents one of the following keyboard language code: US English: 33; French: 08; Japanese: 15.
[B]	Enables/Disables the buzzer.
[X] [Enter]	Enables/Disables the port switching keys.
[R] [Enter]	Resets the hotkey settings to their default status.
[u] [p] [g] [r] [a] [d] [e] [Enter]	Invokes Firmware Upgrade Mode. See *The Firmware Upgrade Utility*, page 31, for full details.
[D]	Invokes Video DynaSync, ATEN's exclusive technology that eliminates boot-up display problems and optimizes resolution when switching between ports.
[S]	Toggles between the default and alternative pushbutton operation settings.
[M]	Enables/Disables mouse emulation.
[W]	Enables/Disable mouse port-switching.
[F1]	Sets SPC mode so that it works under special operating systems as a standard (104 key) keyboard/mouse.

Chapter 5
Keyboard Emulation

Mac Keyboard

The PC compatible (101/104 key) keyboard can emulate the functions of the Mac keyboard. The emulation mappings are listed in the table below.

PC Keyboard	Mac Keyboard
[Shift]	Shift
[Ctrl]	Ctrl
[Ctrl] [1]	
[Ctrl] [2]	
[Ctrl] [3]	
[Ctrl] [4]	
[Alt]	Alt
[Print Screen]	F13
[Scroll Lock]	F14
	=
[Enter]	Return
[Backspace]	Delete
[Insert]	Help
[Ctrl]	F15

Note: When using key combinations, press and release the first key (Ctrl), then press and release the activation key.

Sun Keyboard

The PC compatible (101/104 key) keyboard can emulate the functions of the Sun keyboard when the Control key [Ctrl] is used in conjunction with other keys. The corresponding functions are shown in the table below.

PC Keyboard	Sun Keyboard
[Ctrl] [T]	Stop
[Ctrl] [F2]	Again
[Ctrl] [F3]	Props
[Ctrl] [F4]	Undo
[Ctrl] [F5]	Front
[Ctrl] [F6]	Copy
[Ctrl] [F7]	Open
[Ctrl] [F8]	Paste
[Ctrl] [F9]	Find
[Ctrl] [F10]	Cut
[Ctrl] [1]	
[Ctrl] [2]	
[Ctrl] [3]	
[Ctrl] [4]	
[Ctrl] [H]	Help
	Compose
	◆

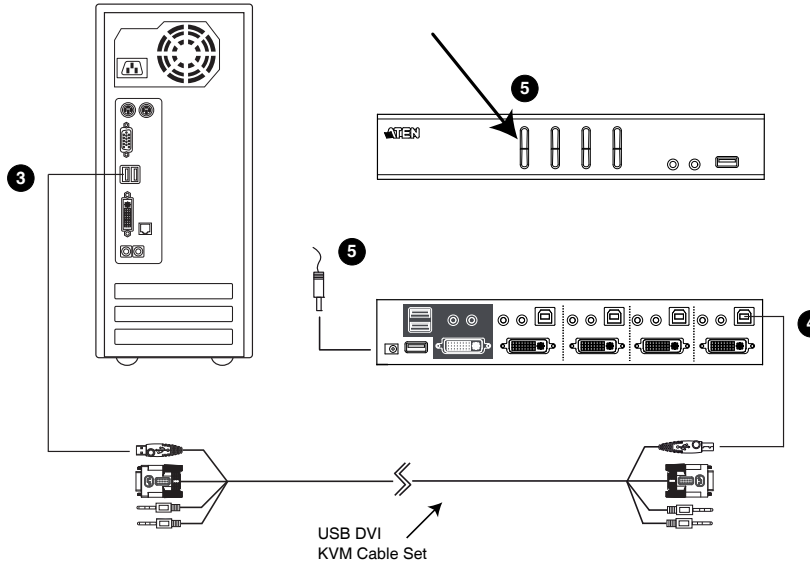
Note: When using key combinations, press and release the first key (Ctrl), then press and release the activation key.

Chapter 6
The Firmware Upgrade Utility

The Windows-based Firmware Upgrade Utility (FWUpgrade.exe) provides a smooth, automated process for upgrading the KVM switch's firmware. The Utility comes as part of a Firmware Upgrade Package that is specific for each device. Check the web site regularly to find the latest packages and information relating to them at `http://www.aten.com`

Before you Begin

1. From a computer that is not part of your KVM installation go to our Internet support site and choose the model name that relates to your device (CS1762A / CS1764A) to get a list of available Firmware Upgrade Packages.
2. Choose the Firmware Upgrade Package you want to install (usually the most recent), and download it to your computer.
3. Disconnect the CS1762A / CS1764A from your KVM installation and power it off. Connect one of the USB DVI KVM cable set's Type A USB connectors to a USB hub port on your computer.



4. At the other end of the USB DVI KVM cable set, connect the USB Type B connector to the Type A USB port in the Port 1 KVM section.

Note: The USB DVI KVM cable set's USB Type B connector can be connected to any USB Type KVM port section, but the Port Selection pushbutton in Step 5, below, must be Port 1.

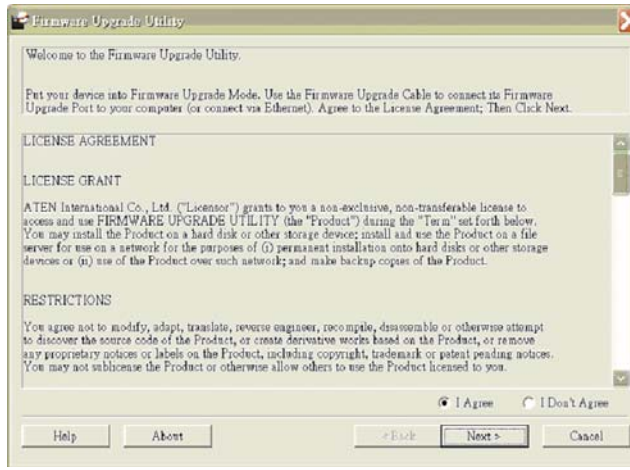
5. Invoke Firmware Upgrade Mode (see page 26). The front panel orange LEDs flash to indicate that Firmware Upgrade Mode is in effect.

Starting the Upgrade

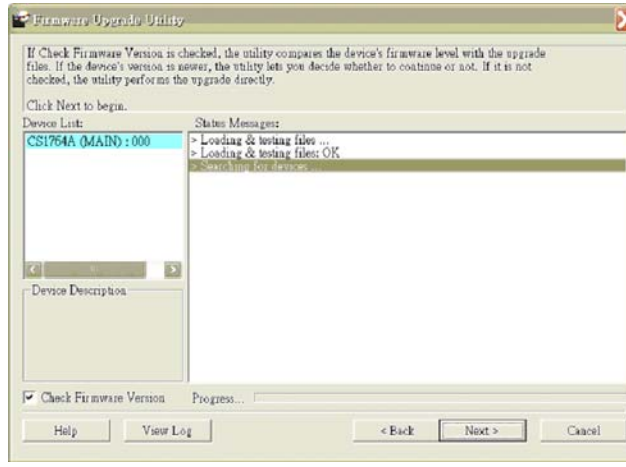
1. Run the downloaded Firmware Upgrade Package file – either by double clicking the file icon, or using a command line to enter the full path.

   The *Firmware Upgrade Utility* Welcome screen appears:

2. Read the License Agreement (enable the *I Agree* radio button).

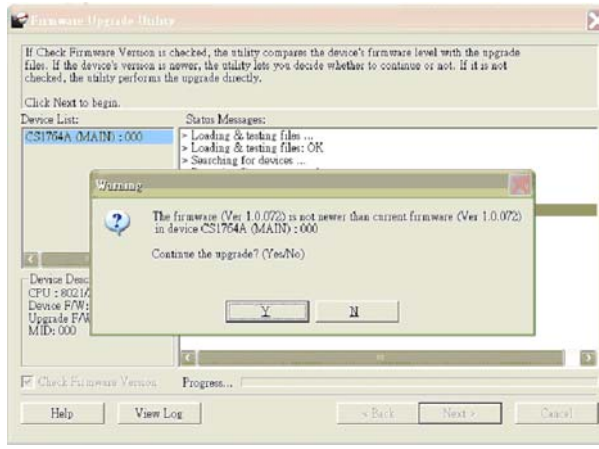

Firmware Upgrade Utility
Welcome to the Firmware Upgrade Utility.
Put your device into Firmware Upgrade Mode. Use the Firmware Upgrade Cable to connect its Firmware Upgrade Port to your computer (or connect via Ethernet). Agree to the License Agreement; Then Click Next.
LICENSE AGREEMENT
LICENSE GRANT
ATEN International Co., Ltd. ("Licensor") grants to you a non-exclusive, non-transferable license to access and use FIRMWARE UPGRADE UTILITY (the "Product") during the "Term" set forth below. You may install the Product on a hard disk or other storage device; install and use the Product on a file server for use on a network for the purposes of (i) permanent installation onto hard disks or other storage devices or (ii) use of the Product over such network; and make backup copies of the Product.
RESTRICTIONS
You agree not to modify, adapt, translate, reverse engineer, recompile, disassemble or otherwise attempt to discover the source code of the Product, or create derivative works based on the Product, or remove any proprietary notices or labels on the Product, including copyright, trademark or patent pending notices. You may not sublicense the Product or otherwise allow others to use the Product licensed to you.
I Agree
I Don't Agree
Help
About
< Back
Next >
Cancel

3. Click **Next.** The Firmware Upgrade Utility main screen appears. The Utility inspects your installation. All the devices capable of being upgraded by the package are listed in the *Device List* panel.


Firmware Upgrade Utility
If Check Firmware Version is checked, the utility compares the device's firmware level with the upgrade files. If the device's version is newer, the utility lets you decide whether to continue or not. If it is not checked, the utility performs the upgrade directly.
Click Next to begin.
Device List:
CS1764A (MAIN) : 000
Status Messages:
> Loading & testing files ...
> Loading & testing files: OK
> Searching for devices ...
Device Description
Check Firmware Version
Progress...
Help
View Log
< Back
Next >
Cancel

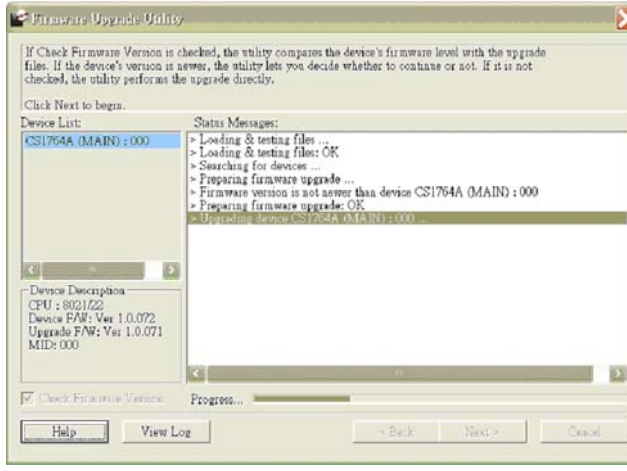
4. As you select a device in the list, its description appears in the Device Description panel.After you have made your device selection(s), Click **Next** to perform the upgrade.

   If you enabled Check Firmware Version, the Utility compares the device's firmware level with that of the upgrade files. If the device's version is higher than the upgrade version, a dialog box gives you the option to Continue or Cancel.


Firmware Upgrade Utility
If Check Firmware Version is checked, the utility compares the device's firmware level with the upgrade files. If the device's version is newer, the utility lets you decide whether to continue or not. If it is not checked, the utility performs the upgrade directly.
Click Next to begin.
Device List:
Status Messages:
CS1764A (MAIN) : 000
> Loading & testing files ...
> Loading & testing files: OK
> Searching for devices ...
Warning
The firmware (Ver 1.0.072) is not newer than current firmware (Ver 1.0.072) in device CS1764A (MAIN) : 000
Continue the upgrade? (Yes/No)
Y
N
Check Firmware Version
Progress...
Help
View Log
< Back
Next >
Cancel

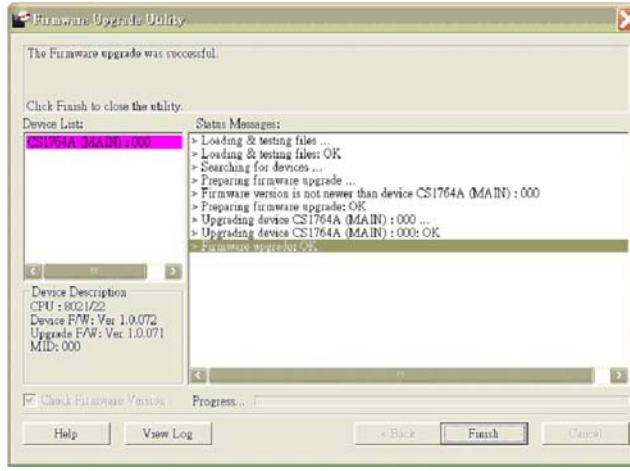
   If you didn't enable *Check Firmware Version*, the Utility installs the upgrade files without checking whether they are a higher level, or not.

   As the Upgrade proceeds status messages appear in the Status Messages panel, and the progress toward completion is shown on the *Progress* bar.


Firmware Upgrade Utility
If Check Firmware Version is checked, the utility compares the device's firmware level with the upgrade files. If the device's version is newer, the utility lets you decide whether to continue or not. If it is not checked, the utility performs the upgrade directly.
Click Next to begin.
Device List:
Status Messages:
CS1764A (MAIN) : 000
> Loading & testing files ...
> Loading & testing files: OK
> Searching for devices ...
> Preparing firmware upgrade ...
> Firmware version is not newer than device CS1764A (MAIN) : 000
> Preparing firmware upgrade: OK
> Upgrading device CS1764A (MAIN) : 000 ...
Device Description
CPU : 8021f22
Device F/W: Ver 1.0.072
Upgrade F/W: Ver 1.0.071
MID: 000
Check Firmware Version
Progress...
Help
View Log
< Back
Next >
Cancel

Upgrade Succeeded

After the upgrade has completed, a screen appears to inform you that the procedure was successful:



Click **Finish** to close the Firmware Upgrade Utility.

After a successful completion, the CS1762A / CS1764A exits Firmware Upgrade Mode, and resets itself.

Upgrade Failed

If the *Upgrade Succeeded* screen doesn't appear, it means that the upgrade failed to complete successfully, in which case you should do the following:

1. Power off the CS1762A / CS1764A by removing the power jack.
2. Invoke Firmware Upgrade Mode by holding down the front panel *Mode Selection* pushbutton (see *Components*, page 6) and power on the CS1762A / CS1764A. The orange LEDs flash together.
3. Do the firmware upgrade procedure again.

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Appendix

Safety Instructions

- Read all of these instructions. Save them for future reference.
- Follow all warnings and instructions marked on the device.
- Do not place the device on any unstable surface (cart, stand, table, etc.). If the device falls, serious damage will result.
- Do not use the device near water.
- Do not place the device near, or over, radiators or heat registers.
- The device cabinet is provided with slots and openings to allow for adequate ventilation. To ensure reliable operation, and to protect against overheating, these openings must never be blocked or covered.
- The device should never be placed on a soft surface (bed, sofa, rug, etc.) as this will block its ventilation openings. Likewise, the device should not be placed in a built in enclosure unless adequate ventilation has been provided.
- Never spill liquid of any kind on the device.
- Unplug the device from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
- The device should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- The device is designed for IT power distribution systems with 230V phase-to-phase voltage.
- To prevent damage to your installation, it is important that all devices are properly grounded.
- The device is equipped with a 3-wire grounding type plug. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not attempt to defeat the purpose of the grounding-type plug. Always follow your local/national wiring codes.
- Do not allow anything to rest on the power cord or cables. Route the power cord and cables so that they cannot be stepped on or tripped over.
- If an extension cord is used with this device make sure that the total of the ampere ratings of all products used on this cord does not exceed the

extension cord ampere rating. Make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.

- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or un-interruptible power supply (UPS).
- Position system cables and power cables carefully; Be sure that nothing rests on any cables.
- Never push objects of any kind into or through cabinet slots. They may touch dangerous voltage points or short out parts resulting in a risk of fire or electrical shock.
- Do not attempt to service the device yourself. Refer all servicing to qualified service personnel.
- If the following conditions occur, unplug the device from the wall outlet and bring it to qualified service personnel for repair.
  - The power cord or plug has become damaged or frayed.
  - Liquid has been spilled into the device.
  - The device has been exposed to rain or water.
  - The device has been dropped, or the cabinet has been damaged.
  - The device exhibits a distinct change in performance, indicating a need for service.
  - The device does not operate normally when the operating instructions are followed.
- Only adjust those controls that are covered in the operating instructions. Improper adjustment of other controls may result in damage that will require extensive work by a qualified technician to repair.

Technical Support

International

- For online technical support – including troubleshooting, documentation, and software updates: **http://support.aten.com**
- For telephone support, see *Telephone Support*, page iii.

North America

Email Support		support@aten-usa.com
Online Technical Support	Troubleshooting Documentation Software Updates	http://www.aten-usa.com/support
Telephone Support		1-888-999-ATEN ext 4988

When you contact us, please have the following information ready beforehand:

- Product model number, serial number, and date of purchase.
- Your computer configuration, including operating system, revision level, expansion cards, and software.
- Any error messages displayed at the time the error occurred.
- The sequence of operations that led up to the error.
- Any other information you feel may be of help.

Specifications

Function			CS1762A	CS1764A
Computer Connections			2	4
Port Selection			Front Panel Pushbuttons; Hotkey	
Connectors	Console Ports	KB	1 x USB Type A F (White; front panel)	1 x USB Type A F (Black; rear panel)
		Video	1 x DVI-I F (white)	
		Mouse	1 x USB Type A F (white; front panel)	1 x USB Type A F (Black; rear panel)
		Speakers	1 x Mini Stereo Jack F (Green; rear panel)	2 x Mini Stereo Jack F (Green; 1 x front panel, 1 x rear panel)
		Mic.	1 x Mini Stereo Jack F (Pink; rear panel)	2 x Mini Stereo Jack F (Pink; 1 x front panel, 1 x rear panel)
	KVM Ports	KB/ Mouse	2 x USB Type B F (White)	4 x USB Type B F (White)
		Video	2 x DVI-I F (White)	4 x DVI-I F (White)
		Speakers	2 x Mini Stereo Jack F (Green)	4 x Mini Stereo Jack F (Green)
		Mic.	2 x Mini Stereo Jack F (Pink)	2 x Mini Stereo Jack F (Pink)
	Power		1 x DC Jack	1 x DC Jack
	USB Hub		2 x USB Type A F (Black, rear panel)	2 x USB Type A F (White; 1 x front panel, 1 x rear panel)
Switches	Selected		2 x Pushbutton	4 x Pushbutton
LEDs	On Line / Selected		2 (Orange)	4 (Orange)
	USB Link		2 (Green)	4 (Green)
Emulation	KB / Mouse		USB	
Video			1920 x 1200	
Scan Interval			1–99 secs. (5 secs. default)	
Power Consumption			DC 5.3V, 9.0 W	DC 5.3V, 10.7 W

Function		CS1762A	CS1764A
Environment	Operating Temp.	0–50ºC	
	Storage Temp.	-20–60ºC	
	Humidity	0–80% RH, Non-condensing	
Physical Properties	Housing	Metal	
	Weight	0.73 kg	0.94 kg
	Dimensions (L x W x H)	21.00 x 8.70 x 5.50 cm	27.00 x 8.70 x 5.50 cm

Troubleshooting

Operation problems can be due to a variety of causes. The first step in solving them is to make sure that all cables are securely attached and seated completely in their sockets. In addition, updating the product's firmware may solve problems that have been discovered and resolved since the prior version was released. If your product is not running the latest firmware version, we strongly recommend that you upgrade. See *The Firmware Upgrade Utility*, page 31, for details.

Symptom	Possible Cause	Action
Erratic behavior.	Unit not receiving enough power.	Use a DC 5.3 V power adapter if you are not already using one. If you are already using a power adapter, check that it matches the system specifications, and that it is plugged in and functioning properly.
	Keyboard and/or mouse need to be reset.	Unplug the cable(s) from the console port(s), then plug it/them back in.
	No connection to the computer.	Check the cable from the switch to the computer to make sure it is properly connected.
	KVM switch needs to be reset.	Power off all devices on the installation; power off the KVM switch; wait five seconds; then power up.
USB devices not responding.	USB ports need to be reset.	Unplug the device's USB cable from the USB port on the switch's rear panel, then plug it back in.
		Use the USB Reset hotkey combination (see page 25), to reset the USB ports.
Cannot switch ports by pressing [Scroll Lock] twice	Keyboard is incompatible with Scroll Lock invocation.	Switch to the Alternate HSM invocation keys. See *Alternate HSM Invocation Keys*, page 23, for details.
Monitor does not display after KVM cable set is hot plugged.	Some HDMI/DVI graphics cards are incompatible with cable set hot plugging.	Power off all devices on the installation; power off the CS1762A / CS1764A; confirm all KVM cables are properly connected; power on the CS1762A / CS1764A; power on the computers

Symptom	Possible Cause	Action
When switching ports, the monitor does not display.	Monitor is new or this is the first time installation.	Switch ports again and wait two or more seconds for the PC's EDID to pass to the monitor.
	The PC's EDID has not passed through to the monitor when switching ports	Use the [d] hotkey to invoke Video DynaSync one more time or switch to another PC to reconnect the CS1762A / CS1764A. See *HSM Summary Table*, page 28.
When switching ports, there is a several second delay before the change happens.	This can occur when keyboard emulation is disabled.	Use the [F10] hotkey to enable keyboard emulation. See *HSM Summary Table*, page 28.
When switching ports with the mousewheel, and I want to switch across two ports (from Port1 to Port 3, for example), sometimes the change doesn't happen.	The switch needs more time to process the mouse input.	Wait 3 – 4 seconds between ports before clicking for the next port.

Hotkey Default Settings

The hotkey factory default settings are as follows:

Setting	Hotkey	Default
Port Switching	[T]	[Scroll Lock] [Scroll Lock]
Invoking HSM	[H]	[Number Lock] [-]
Auto Scan Interval	[Scroll Lock] [Scroll Lock] [A] [Enter]	5 seconds
Keyboard Operating Platform	[F10]	PC Compatible
Mouse Emulation	[M]	Enabled
Mouse Port-switching	[W]	Disabled
Video DynaSync	[D]	Enabled
Port Switching Keys (On / Off)	[X] [Enter]	Enabled
Buzzer	[B]	Enabled
Keyboard Language	[F6] [nn] [Enter] Note: **nn** is the language number	English

Limited Warranty

IN NO EVENT SHALL THE DIRECT VENDOR'S LIABILITY EXCEED THE PRICE PAID FOR THE PRODUCT FROM DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCT, DISK, OR ITS DOCUMENTATION.

The direct vendor makes no warranty or representation, expressed, implied, or statutory with respect to the contents or use of this documentation, and especially disclaims its quality, performance, merchantability, or fitness for any particular purpose.

The direct vendor also reserves the right to revise or update the device or documentation without obligation to notify any individual or entity of such revisions, or update. For further inquiries, please contact your direct vendor.